GEOGRAPHIC NEWS BULLETINS

Published Weekly by

THE NATIONAL GEOGRAPHIC SOCIETY

(The National Geographic Society is a scientific and educational Society, wholly altruistic, incorporated under the Federal law as a non-commercial institution for the increase of geographic knowledge and its popular diffusion.)

General Headquarters, Washington, D. C.

Contents for Week of April 15, 1935. Vol. XIV. No. 9.

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5. General Greely Awarded Congressional Medal.

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Photograph courtesy U. S. Geological Survey

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Dust Storms Around the World

DUST storms that have alternately scoured and smothered the Prairie States this spring are labeled the worst in the history of the country. High March winds have sucked up billions of tons of soil from the western plains and rolled it eastward, turning green fields to yellow desert, stalling motor, rail, and air traffic, causing death and disease, and spreading a dry haze as far east as the Atlantic seaboard.

The great storm of May 11, 1934, which reached from Montana to the Atlantic, and hung a 10,000-ton dust blanket over the National Capital, was merely a preface to this year's catastrophe.

Tree Belt from Canada to Texas

Severe winds and the worst drought in seventy years are only secondary factors in the farm problem that faces the United States. During the World War, when wheat prices shot sky high, thousands of acres of semi-arid grazing land were ploughed under and planted to grain. Destruction of the natural cover for this soil, and over-grazing on the ranges that were left, exposed the land to wind and water.

It is the same thing that has happened in Syria, Palestine, and North Africa. Experts declare that such regions, where the rainfall is less than 25 inches a year, should be left to live-stock and not cultivated.

Grass and tree plantings are being advanced by government scientists as the best insurance against wind erosion. A $15,000,000-shelter belt of trees, to stretch from North Dakota to the Texas Panhandle, is part of a plan to protect farms within its area. This forest barrier, 100 miles wide and over 1,500 miles long, following roughly the line of 18 inches rainfall, is designed to restore the water level, improve living conditions within the belt, act as a snow fence, and hold wind-blown dust.

European Dust Storms

During the next ten years the Forest Service will plant 3,500,000,000 trees in hundreds of narrow strips, each a hundred feet wide and a mile apart. Only trees suitable to the climate will be chosen, and there will be gaps in the ranks, where the soil is too poor to justify planting.

Over sixty years ago Russia began such a project to protect the wheat fields of the Ukraine from the "black dust storms" that sweep across the southern steppes.

Italy, Hungary, and France have recently reclaimed waste land and prevented erosion by "tree farming."

Dust storms are not by any means the exclusive property of the United States. Darwin reports that in South America, during the dry seasons of 1827-1830, so much soil was blown about that boundaries were obscured and property rights confused. In October, 1928, chocolate dust from Australia stained the snow peaks of New Zealand, 1,500 miles away. In the spring of that same year, some 15 billion tons of earth from the Ukraine was scattered over Europe.

The Sahara is the source of supply for most European dust storms. Hot sirocco winds carry dust over the Mediterranean and northward as far as the Baltic. Homer, Virgil, and Livy mention these "dry fogs."

When the northeast trades blow over Africa, they sweep this dust out over the Atlantic, which sailors of ancient times called the "sea of darkness."

"Red Snow" and "Showers of Blood"

Sahara dust usually has a reddish tinge due to particles of iron compounds. A three-day storm in 1901 rouged the snow fields of the Alps, spread a reddish haze from the Canaries to Cape Verde Islands, reached England and northern Germany, and dumped nearly two billion tons of dust north of the Mediterranean. A similar type of dust may have caused the "red snow" that alarmed the natives of northeastern Turkey recently, although this coloring can also come from microscopic plants.

Red dust mixed with rain makes the "showers of blood" that have frequently terrified the people of southern Europe. Gregory of Tours tells of such a shower in Paris in 582. "Showers of milk" are rain mixed with chalky dust. Colorado recently experienced a "sulphur blizzard" which proved to be yellow pollen from pine trees.

A dust storm is really a sort of atmospheric flood, an intensive phase of something that goes on all the time. A farmer never plants his crops in the same soil two successive years.

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Photograph by American Colony Photographers

A CARAVAN HURRIES TO SHELTER AS A SANDSTORM SWEEPS IN FROM THE DESERT

Swirling clouds of dust and tiny pellets are nothing unusual in arid regions of northern Africa and the Near East. Extremes of heat and cold, wide open spaces, narrow chasms that become super-heated chimneys—all give rise to wind storms, somewhat similar to those which have swept over the Plains States in our own country recently (see Bulletin No. 1).

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North Manchurian Railway Begins Operations

ASIA has a new railroad system embracing 1,123 miles (the distance from Kansas City to Washington, D. C.). It is new in name and operation, but not in trackage, being the former Chinese Eastern Railway. Since its recent transfer from Russian to Manchutikuoan hands, the Chinese Eastern is known as the "North Manchurian Railway."

Ever since it was stretched across the barren, rolling plains of northern Manchuria, a third of a century ago, the Chinese Eastern Railway has been used as a tug o' war between the Russian bear, the Chinese dragon, and the Japanese imperialist.

Built by engineers of the Russian Tsar as the world's longest "land bridge," across an alien territory, it did not begin to serve Manchuria as a railroad should until nearly twenty years after its construction.

Short Cut from Chita to Vladivostok

The story of the Chinese Eastern is intertwined with the tangled threads of many important events in European and Asiatic history. England and France, in the Crimean War, thwarted Russia's attempt to gain an ice-free port, so the Slavs in 1891 turned toward the Pacific. By 1896 they had laid the tracks of the Trans-Siberian Railway as far as Chita.

At Chita they were faced with a problem. They could continue the route to the Pacific port of Vladivostok through all-Russian territory around the great bend of the Amur River border, or they could take a short cut straight across Manchuria. A concession from China permitted the building of the cut-off, clipping nearly 600 miles from the all-Russian long route.

The Chinese Eastern was opened in 1903, but through traffic to Vladivostok did not begin until 1905. (As a military precaution the all-Russian long route was also built between 1908 and 1916.) The short-cut across Manchuria from Manchuli, the western border station, to Pogranichnaya, the eastern border town, is 925 miles, or about the rail distance from New York to Chicago.

When they had reached Vladivostok, however, the Russians were not much better off for a port than before. Ice closes Vladivostok to steamer traffic almost six months of the year. So the Tsar made a new agreement for a 584-mile branch line southward from Harbin to the Liaotung Peninsula. There, in Dalny, they found a truly ice-free port, which they fortified with Port Arthur. The Harbin-Dalny branch was opened in June, 1903.

Important Towns Ignored

Eight months later the Russo-Japanese War (which some say was provoked by the building of the railway) broke out. At the end of the war Russia lost to Japan the port of Dalny (now Dairen) and 437 miles of the branch line as far north as Changchun (now Hsinking, the new capital of Manchutikuo).

Japan took no chances. She immediately relaid her newly-acquired railroad on standard gauge (four feet eight and one-half inches), and renamed it the South Manchurian Railway. The Chinese Eastern and the Trans-Siberian use the five-foot, or "wide" gauge. The net result of this move was that Changchun, once a small plains village, became, almost overnight, a thriving city of 50,000, because all freight moving from one line to the other had to change cars there.

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No air is ever free from dust. It settles on Antarctic snows and Greenland ice. Near the earth this dust is chiefly wind-blown soil; high above, it is "star dust," from the millions of meteors that enter the earth's atmosphere each day. Any dustfall is composed of this local air content mixed with foreign material brought by the storm.

Dust Built China's Farmland

China is famous for her dust storms. In winter they sweep over the North China Plain, covering trees, houses, crops, and people with yellow sediment. It is estimated that in 1932, during one dust storm in Peiping, over 2,700 tons of dust fell within the city walls. The Yellow River and the Yellow Sea are well named. Even the imperial color was yellow!

Dust storms of another age built the Loess Highlands that lie between the North China Plain and the deserts of Central Asia. This fertile, yellow earth, often reaching a depth of 300 feet, covers thousands of square miles in the northern provinces. Crops may be raised on loess without fertilizing; wind renews the soil as the Nile does in Egypt. The fine, yellow silt has a tendency to split in a vertical direction, furrowing the region with steep cliffs and canyons. The natives often carve cave dwellings in these cliffs, climbing to the roofs of their homes to plough their fields.

Note: The following articles contain illustrated descriptions of the areas affected by this spring's dust storms: "'Compleat Angler' Fishes for Fossils (Wyoming)," *National Geographic Magazine,* August, 1934; "By Car and Steamer Around Our Inland Seas," April, 1934; "Washington, the Evergreen State," February, 1933; "Colorado, a Barrier That Became a Goal," July, 1932; "Illinois, Crossroads of the Continent," May, 1931; "Santa Fe Trail, Path to Empire," August, 1929; "Trailing History down the Big Muddy," July, 1928; "The Great Mississippi Flood of 1927," September, 1927; "Pirate Rivers and Their Prizes," July, 1926; "On the Trail of the Air Mail," January, 1926; "Everyday Life in Pueblo Bonito (New Mexico)," September, 1925; "The Non-Stop Flight across America," July, 1924; and "Missouri, Mother of the West," April, 1923.

Bulletin No. 1, April 15, 1935.

Photograph from Hayes-Hall Kansu Earthquake Relief Expedition

WHAT HAPPENS WHEN WIND-BLOWN SOIL "WALKS"

In Kansu Province, China, many thousands of square miles of land is covered with loess, a brittle variety of loam. The photograph above shows the result of an earthquake in the region. A river valley was filled, and a highway wiped out by sliding strata of loose soil. Travelers can be seen making their way along the new road which is being gradually packed down over the soft earth.

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Largest Gondola for Stratosphere Flight Completed

THE gondola for the next attack by science on the stratosphere—the little hollow metal "world" in which two men will be sealed next June as they float probably 13 or 14 miles above the earth—has been completed and is ready to have its cargo of complicated instruments fitted into it.

Word of the completion of this important unit of the flight equipment was received at the Washington, D. C., headquarters of the National Geographic Society, which, with the U. S. Army Air Corps, is sponsoring the newest stratosphere expedition.

Sent First to Dayton, Ohio

The gondola, made in Midland, Michigan, of a magnesium alloy lighter than aluminum, is en route to Dayton, Ohio. There, at Wright Field, its equipment will be installed under the supervision of Capt. Albert W. Stevens and Capt. Orvil A. Anderson, the commander and pilot for the 1935 flight.

The gondola will then be shipped to Rapid City, South Dakota. From the Black Hills near Rapid City the ascent into the upper atmosphere will be made early this summer.

The expedition will use the same camp and sheltered natural bowl that was used during last year's stratosphere flight.

The hollow metal ball is nine feet in diameter, the largest gondola yet designed for stratosphere exploration. Last year's gondola was eight feet, four inches in diameter. A level floor extends across it a foot and a half above the lowest point of the sphere; and on this the two balloonists will have ample room in which to move about and take care of their air-conditioned, floating laboratory (see illustration, next page).

Gas Bag To Be World's Biggest

The National Geographic-Army Stratosphere Flight this year will make use of a balloon considerably larger than any heretofore built. The giant bag now under construction in Akron, Ohio, will have a capacity of approximately 3,700,000 cubic feet of gas.

Utilizing the experience gained last year, when their 3,000,000 cubic-foot balloon developed a tear and crashed in southern Nebraska, the sponsors of the flight have made many improvements.

The most important difference will be the use of helium gas instead of hydrogen. Helium can neither burn nor explode. It is more expensive than hydrogen, however, and has never before been used in stratosphere exploration.

Note: For further material on stratosphere exploration see "The Society Announces New Stratosphere Flight," *National Geographic Magazine*, February, 1935; "Exploring the Stratosphere," October, 1934; "World's Largest Free Balloon To Explore Stratosphere," July, 1934; "The Geographic's Stratosphere Expedition," April, 1934; "Ballooning in the Stratosphere," March, 1933; "Exploring the Earth's Stratosphere," December, 1926.

See also in the GEOGRAPHIC NEWS BULLETINS: "Helium To Lift New Stratosphere Balloon," week of February 4, 1935; "To Repeat Stratosphere Flight from Black Hills," week of January 7, 1935; and "Stratosphere Flight Yields Valuable Data," week of October 1, 1934.

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When Russians built the Chinese Eastern, Manchuria was as wild and woolly as Kansas in the 30's. Slav engineers, having no interest in this Chinese territory, wanted to keep it that way. The Trans-Siberian was built for Russian trade on the Pacific, and for Russian armies, not for Manchurian business and expansion. Slav engineers deliberately missed large Manchurian cities and Russian operators of the line made the freight rates so high that they discouraged local traffic. Kirin, capital of a Manchurian province, was ignored entirely; the walled town of Tsitsihar is still 15 miles off the main line.

Wherever needed, complete Russian towns were built along the right-of-way. The railroad provided everything from stations, schools, and hospitals to clubs, homes, and office buildings. Where two or three mud huts stood on the plain, Russian engineers built the railroad junction city of Harbin. It speedily grew into a metropolis of 350,000, and became famous as the only "white city" run by "yellow men."

Engineers who built the line, however, left out three important items from their railroad plans: the Soviet Revolution, Chinese migration to Manchuria, and finally Japanese conquest of the area leading to the setting up of a separate state called Manchutikuo. The first resulted in China's getting a real half interest in the profits and operation of the road. The second converted the Chinese Eastern and its branches from a bridge across Manchuria into a main shaft tapping the soy bean and wheat riches of this new "Granary of the Orient." The third led to the building of parallel lines of railway which diverted much of the Chinese Eastern's local freight and passenger traffic.

Note: Students interested in the geography of Manchutikuo and the eastern Soviet Republics should consult the following: "Here in Manchuria," *National Geographic Magazine*, February, 1933; "Byroads and Backwoods of Manchuria," January, 1932; "Manchuria, Promised Land of Asia," October, 1929; "With an Exile in Arctic Siberia," December, 1924; "The Far Eastern Republic," June, 1922; "Western Siberia and the Altai Mountains," May, 1921; "Glimpses of Siberia, the Russian 'Wild East,'" December, 1920; and "Russia from Within," August, 1917.

Bulletin No. 2, April 15, 1935.

Photograph by Carl Schuster

AT HARBIN RAIL AND WATER TRAFFIC CROSS

"The City the Railroad Built" now is an important trade center, shipping soy beans, oil, hides, furs, wool and lumber via shallow-draft steamers on the Sungari River or by railroad. In the background is the bridge built for the Chinese Eastern Railway, recently renamed the North Manchurian Railway, and placed under Manchutikuoan control.

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President and Royal Couple Meet Near Andros Island

DISTINGUISHED visitors brought the Bahama Islands into the headlines recently when President Roosevelt, cruising eastward from Miami, was met at Cat Cay by the Duke and Duchess of Kent.

Near Cat Cay is Andros Island, favorite presidential fishing ground and largest island of the Bahama archipelago. This British colony, composed of some 2,500 fertile islands, rocks, and coral keys, is strung out for about 700 miles in the Atlantic Ocean southeast of Palm Beach and north of Cuba.

Although Andros Island lies only 125 miles southeast of Miami Beach, Florida, and but 20 miles from Nassau, capital of the Bahamas on New Providence Island, it is perhaps the least known of the larger islands in the West Indies.

Much of Andros Unexplored

Almost as long as Puerto Rico, and in one place wider than that island, wedge-shaped Andros has a land area of more than 1,600 square miles (nearly a third of the area of the Bahama group), much of which has never been explored. As recently as two years ago news dispatches reported that a large lake, hitherto unknown, had been found by a party of scientists in the dense, junglelike forests that cover most of its interior.

Andros during periods of high water is really three islands, because several marshy lagoons, or bights, cut across its waistline, about midway between Nicholls Town, the chief settlement, and Cistern Point, at its southern end. The portions of the interior facing these bights are low, swampy and intersected by numerous shallow creeks.

The reason why Andros is less known than some of the remote islands of the South Seas is not difficult to find. Andros has no harbor whatsoever, and boats and small craft of less than five-foot draft are the only ones able to approach its shores. Coral reefs (see illustration, next page), and wide mud flats shut in the island as effectively as would a high wall or a ring of mountains. The slimy mud, like pipe clay, that tapers off into the sea along the west coast in many places prevents approach even in a rowboat.

Flamingo Found on Island

But Andros possesses a good deal of potential wealth. Its forests contain such precious woods as mahogany, cedar, mastic, ebony and logwood, and its lagoons, bayous and mangrove swamps teem with food fishes and wild water-fowl, ranging from ducks to the beautiful pink flamingo. The latter is extinct elsewhere in the Bahamas and in Florida.

Turtles and sharks are also plentiful and there has recently been a slight revival of the shark-skin industry.

Most of the 6,500 inhabitants of Andros are concentrated along the east coast in a few settlements, including Nicholls Town, Golding Cay, Fresh Creek, Red Bay, Staniard Creek, Mastic Point, and Long Bay Cay.

It is reported that back in the forests some of the Negro inhabitants, descendants of slaves brought here in the eighteenth century, have almost reverted to the original type as found in Africa.

Fishing and sponging are the principal industries along the coast, but, where

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THE GONDOLA OF A STRATOSPHERE BALLOON IS A VERY CROWDED PLACE INDEED

These three photographs, taken from different angles, reveal the inside of the big ball which carried the three members of the National Geographic Society-U. S. Army Air Corps Stratosphere Flight 60,613 feet above sea level last July. The gondola for this year's ascent will be similar, and slightly larger. Most conspicuous of the many instruments carried aloft are the globes (top) for obtaining samples of stratosphere air; the short-wave broadcasting equipment; the big man-holes which provide the only entrances and exits; and the black flask containing liquid oxygen and liquid air. The man (center) is Capt. Albert W. Stevens, scientific observer of the 1934 flight, and commander of the forthcoming 1935 ascent.

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General Greely Awarded Congressional Medal

FIFTY-ONE years after the rescue of the ill-fated Lady Franklin Bay Expedition, its leader, Gen. Adolphus W. Greely has been awarded the Congressional Medal of Honor. Bestowed "in recognition of his lifetime service as a distinguished officer and explorer," the medal was presented on General Greely's ninety-first birthday, March 27, at his modest brick home in Georgetown, a part of the District of Columbia.

General Greely, who has been a member of the Board of Trustees of the National Geographic Society ever since The Society was formed in 1888, is the third army officer to receive the Medal of Honor by special act of Congress.

Honors and high achievements have marked General Greely's career. He was the first enlisted man in the Civil War to reach the grade of general in the regular army. As officer and later chief of the U. S. Signal Corps he was responsible for the construction of 25,000 miles of telegraph lines in the United States and its possessions.

Expedition Reached Farthest North

General Greely also served as head of the Weather Bureau, advised President McKinley in the Spanish American War, was in charge of relief work in San Francisco after the earthquake of 1906, and was military ambassador of the United States at the coronation of George V.

Nine foreign societies have honored General Greely for his leadership of the Lady Franklin Bay Expedition, which reached the farthest north of its day (83° 24′) in May, 1882.

The Expedition, which was sent out by the United States in 1881 for the purpose of scientific observations, established a camp at Fort Conger, beside Lady Franklin Bay, on the northeast coast of Ellesmere Island. A ship dispatched the following year to carry supplies to them never arrived. Of the two boats that set out the next year one was crushed in the ice and the other so disabled that it could not proceed.

By the spring of 1884, when a third relief party finally reached Cape Sabine, where the Expedition had spent its last winter, only seven of the original twenty-five men were alive. In spite of cruel cold and slow starvation the Expedition completed the meteorological studies that were its greatest contribution to polar exploration.

Cape Sabine Memorial Erected by The Society

No memorial commemorating the sacrifices of the Expedition had been erected until 1924, when, at the request of the National Geographic Society, the MacMillan Arctic Expedition placed a bronze tablet on a boulder at Cape Sabine (see illustration, next page).

The MacMillan Expedition spent the winter of 1923-24 at Refuge Harbor, on the west coast of Greenland, across Smith Sound from Cape Sabine. Its leader, Donald B. MacMillan, gives a graphic description of his trip to Cape Sabine and the placing of the memorial tablet:

"Our first duty in the spring was to carry out the request of the National Geographic Society," he writes. "Early in May we left our ship to examine the condition of the ice of Smith Sound, and to select a suitable place for the tablet. We crossed the Sound in seven hours (with dogs) and reached the site of the

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land has been cleared for agricultural purposes, pineapples, sugar cane, oranges, bananas, and vegetables have been produced.

Soil Is Thin But Rich

The soil is thin but rich, and rainfall plentiful. In fact, Andros is the only island of the Bahama group with continuously running fresh-water streams. Considering how close it is to American and Canadian markets, its early vegetable crop and fruits could be marketed to advantage if a way could be found to ship them out of the island.

Note: Illustrated material on the Bahama Islands occurs in the following articles: "Hunting Useful Plants in the Caribbean," *National Geographic Magazine*, December, 1934; "Coral Castle Builders of Tropic Seas," June, 1934; "Life on a Coral Reef," January, 1927; and "Devil-Fishing in the Gulf Stream," June, 1919.

Bulletin No. 4, April 15, 1935.

SPRING VACATIONS IN WASHINGTON

Students and teachers visiting Washington during the spring vacation are cordially invited to visit the headquarters of the National Geographic Society to see the notable collection of pictures and exhibits in Explorers' Hall.

Those planning visits to the National Capital at this time will find descriptions and photographs of many new buildings and other changes in the city in "Wonders of the New Washington," *National Geographic Magazine*, April, 1935, and "Washington Through the Years," November, 1931.

Photograph by Dr. Roy Waldo Miner

SEA ANTLERS FROM ANDROS REEF

These boatloads of staghorn coral are destined for a New York City museum. Submerged forests of stone, tinted fairy colors, clothe thousands of miles of jagged reefs that surround the islands of the Bahamas group.

Greely Camp in a blinding snowstorm. The remains of the rock hut could still be seen projecting from the snow.

"Walking through the little valley to Cemetery Ridge, where many of the bodies were found by the relief party in the spring of 1884, we came upon the ring of rocks which had held down the tent of the starving men. A bare spot in this vicinity was still littered with the remains of their camp.

"Stretching southward from the cape to the very horizon was a large body of water, which always buoyed the men of the Greely party with the hope that a ship might reach them at any time during the fall and spring.

"A few weeks later we crossed Smith Sound again with four dog teams. The tablet was landed in the center of the camp, where we bolted it securely to a 100-ton boulder. The work completed, we covered it with the American flag. The next day we unveiled it in the presence of the Eskimos, and told them to inform their children that the tablet must remain forever, in honor of the white men who died there so many years ago."

Note: Supplementary material describing the route followed by the Greely Expedition will be found in "The Sealing Saga of Newfoundland," *National Geographic Magazine*, July, 1929; "The MacMillan Arctic Expedition Returns," November, 1925; "The 'Bowdoin' in North Greenland," June, 1925; and "Peary as a Leader," April, 1920.

Bulletin No. 5, April 15, 1935.

Photograph by Donald B. MacMillan

THE NATIONAL GEOGRAPHIC SOCIETY'S TRIBUTE TO THE HEROIC DEAD OF THE GREELY EXPEDITION

In 1924 an expedition led by Commander Donald B. MacMillan crossed Smith Sound from Greenland and bolted this bronze tablet to a bowlder which stood near the center of Greely's former camp on Ellesmere Island.

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